

### REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of June 28, 2007 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due. However, the Examiner is expressly authorized to charge any deficiencies to Deposit Account No. 50-0951.

In the Office Action, Claims 1-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Patent Application 2002/0136226 to Christoffel (hereinafter Christoffel) in view of U.S. Patent 6,931,249 to Fors (hereinafter Fors).

#### *Amendments to the Claims*

Although Applicants respectfully disagree with the rejections, Applicants nonetheless have amended the claims in order to expedite prosecution of the present application by further emphasizing certain aspects of the claims. Applicants respectfully assert, however, that the claim amendments presented are not intended as, and should not be interpreted as, a surrender of any subject matter. Applicants are not conceding by these amendments that any previously submitted claims are unpatentable over the references of record. Applicants' present claim amendments are submitted only for purposes of facilitating expeditious prosecution of the present Application. Accordingly, Applicants respectfully reserve the right to pursue any previously submitted claims in one or more continuation and/or divisional patent applications.

In this response, Applicants have amended the independent claims to emphasize certain aspects of the claims. In particular, Applicants have amended the independent claims to emphasize that messages sent to the mobile switching center using mobile network control channels are sent via the *mobile network, not the wireless network*. Such amendments are fully supported throughout the Specification. (See, e.g.,

Specification, paragraphs [0029], [0031], and [0032])). No new subject matter has been added by these amendments.

### Aspects of the Claims

Prior to discussing the cited references, it may be useful to discuss certain aspects of the claims. Claims 1, 8, and 15 recite systems and methods for using messages transmitted over a mobile control channel for the mobile network to roam between a mobile network and a wireless network. For example, as recited in Claim 1, a method according to a particular embodiment can include first detecting a wireless network in proximity to a mobile device. After detecting the wireless network, the mobile device can query the wireless network for an Internet Protocol address for the mobile device. Upon receiving the Internet Protocol address, the mobile device can send a message via the mobile network to a mobile switching center of the mobile network using a mobile network control channel. The message, transmitted over the mobile network, instructs the mobile switching center to route voice data intended for the mobile device to the Internet Protocol address via a communicatively-linked gateway and the wireless network.

Claims 5, 12, and 19 recite systems and method for using messages transmitted over a mobile control channel to permit the mobile network to roam between a wireless network and a mobile network. For example, as recited in the method of Claim 5, once the mobile device determines that it is outside the coverage of the wireless network, the mobile device can send a message to the mobile switching center, again over the mobile network, in order to re-route voice calls to the mobile device using the mobile network.

Referring to FIG. 1 below, the methods and systems claimed in the present application basically proceed as follows:

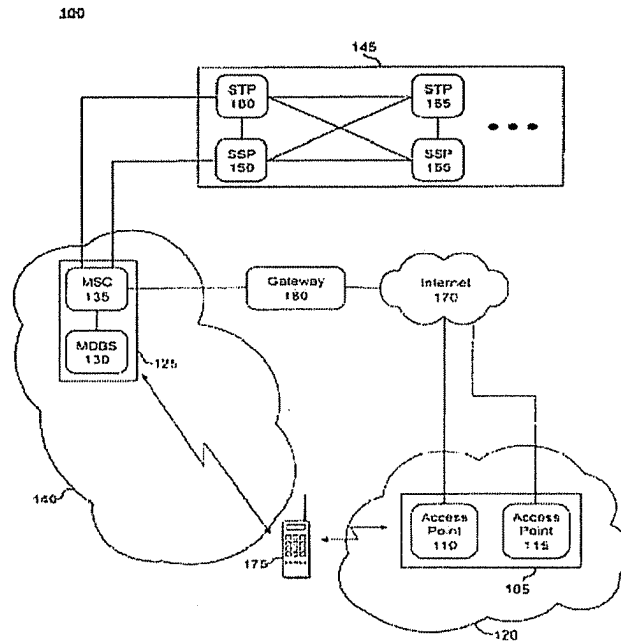


FIG. 1

- 1) Once in proximity or coverage area 120 of wireless network 105, mobile device 175 communicates with AP 110 or 115 over wireless network 105 and retrieves an IP address for mobile device 175.
- 2) Mobile device 175 then communicates with MSC 135 over mobile network 125 and sends a message to MSC 135, via mobile network 125, to instruct MSC 135 to route voice calls for mobile device 175 through wireless network 105 instead of mobile network 125.
- 3) Once outside coverage area 120 of wireless network 105, Mobile device 175 then communicates with MSC 135 over mobile network 125 and sends a message to MSC 135, via mobile network 125, to instruct MSC 135 to route voice calls for mobile device 175 through mobile network 125.

**The Claims Define Over the Cited References**

As previously noted, in the Office Action, the claims were rejected as being unpatentable over Christoffel in view of Fors. Christoffel discloses methods and systems for enabling seamless roaming between wireless *data networks*. Fors discloses systems and methods for *target network initiated handoffs* from a cellular network to a non-cellular wireless network. In view of the references cited and the limitations of the claims, however, Applicant respectfully disagree with the rejections in the Office Action.

First, Applicants respectfully submit although the title of the Christoffel publication suggests roaming for wireless devices among wireless networks, when viewed in terms of *all* the teachings the disclosure, it would be obvious to one of ordinary skill in the art that Christoffel fails disclose efforts in the same field of endeavor. Applicants acknowledge that Christoffel does disclose switching between various types of heterogeneous network connections, including cellular connections. However, in Christoffel, all of these networks are explicitly *data networks, not voice networks*. (See, e.g., Abstract, paragraphs [0013] and [0112]). Nowhere does Christoffel, alone or in combination with one or more references, disclose or suggest to one of ordinary skill in the art to use the teachings of Christoffel to transfer cellular voice calls between cellular and non-cellular networks.

Second, Fors fails to disclose sending messages to a mobile switching center of the mobile network as recited in the claims. Although Fors discloses switching voice calls between mobile and wireless networks, Fors only discloses a *target network-based* method. That is, with Fors, in response to detecting a wireless network in proximity to the mobile device, the mobile device initiates a handoff process through the *wireless network, not the mobile network*, as noted in Fors:

Having determined that a handoff is preferred, processor 204 sends a handin request (302) to CAG 214. The request is sent to CAG 214 via transmitter 202, WLAN AP 210, and IP network 211. Thus, the handin request is sent using an IP

packet addressed to CAG 214. The handin request contains an indication of which MSC is associated with MS 201, i.e., which MSC is serving MS 201. The indication takes the form of a serving cell identifier which CAG 214 can use to determine the corresponding serving MSC. In the first embodiment, this serving cell identifier is the PN offset of MS 201's serving cell within BS 250, while in an alternative GSM embodiment, the serving cell identifier may be the Base Transceiver Station Identity Code (BSIC) of MS 201's serving cell.

**Cellular interworking device 216 of CAG 214 receives the IP-packetized handin request from MS 201 via network interface 215.** In response to MS 201's handin request, cellular interworking device 216 of CAG 214 sends a handoff request (304) to MSC 251. CAG 214, representing the handoff target, sends this message to trigger inter-MSC handoff procedures. Thus, it is the handoff target that initiates the handoff of MS 201 from the cellular network to the WLAN. This new handoff request message is necessary because the prior art messaging (i.e., IS-41/MAP) does not provide for the handoff target to initiate an inter-MSC handoff. In the prior art, the serving MSC initiates such handoffs; however, in the case of a cellular-to-WLAN handoff, the serving cellular MSC (MSC 251, e.g.) is not aware of the non-cellular, WLAN network.

(Col. 6, lines 8-36.) (Emphasis supplied.)

In short, Fors explicitly discloses that all handoffs are handled through requests sent through the mobile device's connection to the target network, i.e., the wireless network. According to Fors, the mobile device never directly communicates with MSC to initiate handoff. Instead, the mobile device directly communicates with CAG via the wireless network, and the CAG subsequently communicates via a gateway with the MSC to pass the re-routing instructions. This method is also illustrated in FIG. 3 of Fors, where it is clearly illustrated that the "handin" request 302 is sent from the mobile station (mobile device) directly to the CAG, and not through the serving BS or MSC for the mobile station. The CAG then sends the "handoff" request 304 to the MSC. Nowhere does Fors teach or suggest that the request would be sent through the mobile network. Furthermore, sending such requests through the mobile network would be contrary to the teachings of Fors. In particular, Fors explicitly discloses that by handling all requests through the wireless network, the mobile network would need no "special information about non-cellular networks to support handoffs". (Col. 3, lines 25-26.) Furthermore, as noted on

page 3 of the Office Action, such a feature is also not disclosed in Christoffel. In contrast, the claims explicitly recite the limitation that the handoff procedure is initiated by sending handoff request messages to the MSC via the *mobile network, not the wireless network*.

Finally, in regards to the rejections of Claims 5, 12, and 19, Applicants respectfully submit that neither Christoffel or Fors disclose or suggest any method by which a voice call can be transferred back to a cellular network from a voice network. As noted above, Christoffel fails to disclose management of voice calls. In particular, Christoffel, in the text accompanying FIG. 17, while disclosing the possibility of transferring data network connections between a WLAN and a cellular network, does not discuss any details on any type of method or system that could be used to transfer a voice call from the WLAN to the cellular network. In the text accompanying FIG. 18, Christoffel only discloses an existing and active cellular network connection for data packets. In the text accompanying FIG. 19, Christoffel discloses moving from a cellular network to a WLAN, but does not disclose reversing the process. In summary, as previously stated, Christoffel does not disclose how to transfer voice calls between WLAN network and cellular network.

Such a feature is also not disclosed in Fors. Fors only discloses (as indicated in its title) handoff from a source cellular network to a target non-cellular network. Nowhere does Fors disclose or suggest how to reverse the process. In contrast, the claims recite sending messages from the mobile device to the MSC, over the mobile network, to trigger the transfer of voice calls from a wireless to a mobile network serving the mobile device.

Accordingly, Christoffel and Fors, alone or in combination with any other reference of record, fail to disclose, suggest or render obvious each and every element of the independent claims. Applicants therefore respectfully submit that the independent

claims define over the references of record. Furthermore, as the remaining claims each depend from one of the independent claims while reciting additional features, Applicants respectfully submit that the remaining dependent claims likewise define over the references of record.

### CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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Date: September 28, 2007

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